

# 43 Lecture - MTH101

## Important Subjective

**What is the comparison test for convergence of infinite series?**

**Answer:** The comparison test for the convergence of an infinite series is a method of determining whether a given series converges or diverges by comparing it with another series.

**What is the ratio test for convergence of infinite series?**

**Answer:** The ratio test is a convergence test for infinite series. It states that if the limit of the ratio of consecutive terms of a series is less than 1, then the series converges absolutely.

**What is the root test for convergence of infinite series?**

**Answer:** The root test is a convergence test for infinite series. It states that if the limit of the  $n$ th root of the absolute value of the  $n$ th term of a series is less than 1, then the series converges absolutely.

**What is the integral test for convergence of infinite series?**

**Answer:** The integral test is a convergence test for infinite series. It states that if the integral of the function corresponding to the series converges, then the series converges.

**What is the alternating series test for convergence of infinite series?**

**Answer:** The alternating series test is a convergence test for infinite series in which the terms alternate in sign. It states that if the absolute value of the terms decrease monotonically to 0, then the series converges.

**What is the alternating series error bound?**

**Answer:** The alternating series error bound is an estimate of the error involved in approximating the sum of an alternating series with a finite number of terms.

**What is the Cauchy condensation test for convergence of infinite series?**

**Answer:** The Cauchy condensation test is a convergence test for infinite series. It states that if the terms of a series decrease monotonically to 0, then the series converges if and only if the corresponding series obtained by taking the sum of powers of 2 of the terms converges.

**What is the absolute convergence test for infinite series?**

**Answer:** The absolute convergence test is a convergence test for infinite series. It states that if the absolute value of each term of a series converges, then the series converges absolutely.

**What is the p-series test for convergence of infinite series?**

**Answer:** The p-series test is a convergence test for infinite series of the form  $1/n^p$ , where p is a positive number. It states that if  $p > 1$ , then the series converges; if  $p \leq 1$ , then the series diverges.

**What is the limit comparison test for convergence of infinite series?**

**Answer:** The limit comparison test is a method of determining whether a given series converges or diverges by comparing it with another series. It states that if the limit of the ratio of the terms of the two series is a positive constant, then the two series either both converge or both diverge.